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ABSTRACT

The purpose of this monograph is to give Georgia elementary school principals and other interested educators the background and understanding about "Middle School Programs" to assist them in acting as constructive forces in the evolvement of such programs. The lead article by Mary F. Compton gives some of the major philosophical and psychological foundations on which middle school programs are theoretically developed and outlines many reasons why a restructuring of our schools in the middle grades should be considered. Donald R. Nesbitt traces the development of middle schools and gives the available evidence indicating what has actually been accomplished through the establishment of middle school programs. David J. Mullen suggests some ways to explicate the educational promise inherent in any such new movement. O. Paul Roaden gives some practical alternatives to consider when new middle school buildings are to be constructed. In the final article, C. W. McGuffey explores the relationships of the emerging middle school program to facilities needs and discusses several potentially useful guidelines for planning a middle school plant. (Author/MLF)

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THE MIDDLE SCHOOL

Edited by

David J. Mullen

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to Better Understand the Emerging Middle School Program.

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FOREWORD

> For more than a hundred years much complaint has been made of the unmethodical ways in which schools are conducted, but it is only within the last thirty that any serious attempt has been made to find a remedy for this state of things. And with what result? Schools remain exactly as they were.
>
> - John Amos Commenius
> The Great Didactic 1632

The middle school movement is receiving considerable attention throughout the United States. In the State of Georgia many schools are now labeled as middle schools. More and more school systems are being urged to develop middle school organizations.

Commenius in the above quote reminds us of a continuing problem in education. A problem that seems to be perennial - the problem of finding more methodological ways to conduct school.

In today's world the problem of finding better ways to educate our youth is especially critical. This publication addresses itself to the education of the middle - school - age youngster. It is our challenge as educational leaders to use publications such as this one to see that schools do not remain exactly as they were.

Doyne M. Smith
Associate Dean - Bureau of
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PREFACE

Many of the elementary principals in Georgia are faced with the challenge of being involved in a reorganization in their system which results in the creation of middle schools. The Georgia Association of Elementary School Principals is on record as being in favor of all practices which are aimed at improving the education of boys and girls in this State. However, the association is against "faddism" and the use of schools for professional and personal aggrandizement without concomitant benefits to the school patrons and children.

There appears some evidence to indicate that many school systems are jumping on the "Middle School Bandwagon." These school systems are hoodwinking the public by claiming that their new "Middle School Programs" bring about major improvements and benefits when in reality these programs are merely changes in housing patterns. The same teachers, the same methods, the same buildings now house fifth and/or sixth graders and claims are made for a middle school program.

The purpose of this monograph is to give georgia elementary school principals and other interested educators the background and understanding about "Middle School Programs" which will help them to act as a constructive force in their evolvement.

The lead article by Compton gives the reader some of the major philosophical and psychological foundations upon which middle school programs are theoretically developed. Compton outlines many reasons why a restructuring of our schools in the middle grades should be considered.

Nesbitt traces the development of middle schools and gives the available evidence indicating what has actually been accomplished through the establishment of middle school programs.

"Promise or Fad" - Mullen suggests that unless we learn from our junior high school movement history that the middle school movement will be just another educational fad. He suggests some ways that might explicate the educational promise inherent in any such new movement.

Roaden reminds us that program and buildings are tied closely together. He further gives some practical alternatives to consider when new middle school buildings are to be constructed.

In the final article, McGuffey, who is currently (1972-72) president of the Council of Educational Facility Planners International, recommends that facilities needs of the middle school should be planned with the goal of meeting the district characteristics of the middle school aged learners and it should be suitable for housing the emerging middle school program. He discusses several guidelines that may be of need for planning a middle school plant and suggests that the plant should be capable of responding to future changes.

This monograph will serve its purpose if it provides the principal and others concerned about education with a deeper understanding of the middle-school-age youngster, the program which purports to serve his need, and the facilities recommended to carry out the program.

David J. Mullen
Editor

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The nature of the middle school child: Implications for educational practice

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Until the last decade or so we have known very little about a group of youngsters whom we placed in an ill-defined segment of school organization. Elementary schools and high schools have almost no identity problems. The man on the street thinks he has a fairly accurate concept of the nature of elementary schools and senior high schools. He probably attended both. Such is not the case with middle schools, junior high schools, or intermediate schools. Very few people have any concept of this level, and even fewer laymen and educators care to learn about it. As educators we have not bothered, either, to learn much about the youngsters who attend these schools. Without knowledge of the youngsters to be served, educators cannot hope to provide an educational environment in which these learners' needs may be met.

THE TRANSESCENT

Not only have we known little about the age group from ten to fourteen, but until the 1960's we had no identifying name for them. They were referred to as "pre- and early adolescents," "in-between-agers," even "middle-aged children." Eichhorn (1966) has coined the term "transescent" for these youngsters who are no longer children and yet are not fully adolescent. This group is generally found in grades five or six through eight.

Description of the transescent is not an easy task, because the major characteristic of this age group is tneir variation. They differ greatly from one another within the total group, within sexual groups, and within themselves -- often from one day to the next. Perhaps the most practical means of describing the transescent group may be through broad categories of development. It must be remembered, however, that each of us is more than a sum of his characteristics. We are, indeed, products of the transaction of these characteristics with the environment. We must remain cognizant, also, that there is no fixed age at which the various changes in development occur. Thus, there is no such thing as a "typical eleven-year-old" or even a "typical seventh-grader."

Physical Changes

The most conspicuous changes during the transitional years are those which are physical in nature. One only has to visit a classroom in which these youngsters are grouped by chronological age to observe the tremendous variation among them. Some twelve-year-olds are still quite child-like in physical appearance; others are nearly physically mature. These changes occur for different youngsters at different ages. Some youngsters will not experience specific changes until matriculation in high school; others will be pubescent prior to entry into grade six. The most noticeable physical change is a growth spurt, which is usually at its peak during a period of a year to a year-and-a-half, but which may require as long as three years for completion.

Tanner (1962) and other specialists in adolescent medicine state that changes occur gradually and in various parts of the body at different

times during the transitional period. The first of these changes is in leg length, and these youngsters often appear to be "all legs." Transescents may gain as much as eight inches in height during this period. Since girls are generally two years ahead of boys in development, and, therefore, begin this growth spurt earlier, they tower over boys of the same chronological age. At the age of nine there may be a range in height of five inches between the tallest girl and the shortest boy. By the age of fourteen, the range may be as much as eight inches. Increase in leg length is followed by an increase in hip width, and the child whose figure may have resembled a stick may begin to develop a more angular or a more curvacious form. The next changes are in chest depth, weight, and strength. These latter changes, along with the deepening of the voice and, in boys, the appearance of whiskers, occur in the final phase of the cycle.

Growth of the nose, ears, and lower jaw to adult size make transescents less attractive than they may have been as young children. This less attractive physical appearance, accompanied by the difficulty of managing a changing body, is made even less acceptable to the youngster by the image the mass media seem to be telling him to emulate. If one spends an evening watching television, he may be struck by the emphasis on physical beauty. The programs and commercials display the well-developed adult form in casual attire, relaxing on the family patio, or riding a motorcycle through the countryside. The same is true of magazine and newspaper ads. This emphasis on the physical ideal adds to the stress of youngsters who already feel anxious about their appearance. Yeatts (1967),

in her study of the self concepts of youngsters in grades three through twelve, found that this age group had the least positive concept of self in the area of physical appearance. This was particularly true of transescent girls.

A rise in blood pressure and a decrease in heart rate occur during these years. This causes increased demands on the heart and warrants concern on the part of parents and teachers about the kinds of strenuous physical activity which may be required by organized sports activities.

An increase in blood sugar may cause the youngster to express a decided aversion to eating breakfast. A few hours later, however, a feeling of stomach emptiness may cause a drop in physical and intellectual energy. These youngsters also have a need for higher caloric intake than do younger children or the full-fledged adolescent. They seem to be constantly eating. The need is for high-protein foods; hamburgers, cokes, potato chips, and candy will not suffice.

A fluctuation in basal metabolism may cause youngsters to be extremely restless at some times and listless at others. This may be disconcerting to parents, teachers, scout leaders, recreation directors, and other adults with whom they come in contact.

Transescents often appear awkward and gawky as contrasted with the poise and grace they may have demonstrated in earlier years. This is probably due to the rapid growth of organs and bones which does not keep a uniform pace. Transescents seem to trip over pieces of lint on the carpet, over their own feet, and over the feet of adults if they get in the way.

Much of this physical growth and change takes place during the warm months of the year when youngsters are likely to be most active physically. The growth of bones and tissue, increased demands on the heart, and an acute sense of physical inadequacy must be taken into consideration by those responsible for physical education programs with emphasis on inter-scholastic sports with the need for winning. Highly organized athletic activity of any type should be very closely examined. Hazards of Little League and Midget Football to this age group cannot be overemphasized because there is constant danger that participation in poorly directed activities of these sorts can result in physical and emotional damage.

Are these physical changes taking place earlier now than at the time of the establishment of the junior high school in 1909-1910? Again, we can turn to the medical profession for the answer. Many specialists in adolescent medicine accept the highly controversial study by Tanner (1962). Physicians agree that, as this study indicates, the onset of puberty is occuring three months earlier each decade. This would mean, then, that during the sixty years since the establishment of the junior high school, the age of the onset of puberty has decreased by eighteen months. The fourteen-year-old of 1910 is comparable physically to the twelve-year-old of the 1970's. A program for the transescent which may have been acceptable in 1910 is, therefore, not appropriate for the '70's.

Intellectual Change

A second type of change experienced by middle school students is that of intellectual development. Perhaps the most valuable information available to educators on this topic is the work of Piaget and Inhelder

(1969) and the psychologists who have worked to validate their theories. Any brief description of intellectual development is, of necessity, an oversimplification.

When each of us gasped for our first breaths outside of the womb, we had a potential for intellectual functioning. Intellectual development and the portion of our potential for intellectual activity which become developed vary greatly from one individual to another. Psychologists tell us that few of us develop more than a small portion of this potential.

Growth in intellectual ability is constant; there is no growth spurt. This growth follows an individual pattern and may vary with the kinds of material to be learned. Each pattern is greatly influenced by factors of maturation, experience, and the many personal factors. There is really no accurate means of predicting the individual's potential or his unique pattern of development. Ages for various kinds of intellectual change are, therefore, approximate and will differ greatly from one individual to another.

During the transescent years, many youngsters undergo a change in mode of intellectual functioning -- a change from a dependence on the concrete experienced by elementary youngsters to the more abstract thinking akin to that of the adult. They must still have experience with information prior to performing mental functions using it, but no longer does the experience have to be direct.

Through symbol systems, especially language, the youngster can begin to deal with these more abstract kinds of material -- that which deals

with possibilities. He can tell us, for example, that the symbols "1, 2, 3, and 4" will probably be followed by the symbols "5, 6, 7, and 8." At first he still focuses on the immediate present -- the "here and now" -- the concrete. He will begin to develop the ability to deal with abstract concepts -- both the real and the possible. He will consider the problem at hand by attempting to envision all possible relations. The next step is seeking, through experimentation and analysis, to test hypotheses -- discarding those not verified by his results. This leads to further hypotheses to be tested.

Transescents are beginning to be able to reverse their thinking not only to proceed from start to finish in a mental sequence but to be able to return to the starting point or any point in the sequence. Not only can they multiply 9 x 9 and get 81, but they can discover that the square root of 81 is 9. In social studies, to use another example, they will be able to ascertain that sequential events lead to a specific consequence; they will also see how a change in a single event might also change the consequence.

During this transition period youngsters can reason that two objects may possess similar properties regardless of their physical appearance. Inhelder and Piaget (1958) have labeled this ability "conservation." In the early stages of conservation, it is a mental function related to mass. For example, a ball of clay may be shaped into a cube and still contain the same amount of clay. Other types of conservation are developed later.

Along with the change from concrete thinking to that which deals with material on a more abstract level, the transescent can deal with questions which are virtually untestable. An example of this might be, "What would

life on earth be like if the sun never set?" This kind of question can help youngsters in the realization that no one has answers to all questions, and it provides an opportunity for them to develop a kind of thinking ability which is generally not emphasized in classrooms -- that of divergent thinking. This kind of thinking is an absolute essential for creative thinking.

Youngsters during transescence are capable of taking much more responsibility for their own learning if they are given the opportunity to do so. They need experience with a variety of materials and information which requires levels of thinking which are higher than memory and convergent thinking, both of which emphasize the one right answer. Evaluative thinking and divergent thinking must be included in their repertoire. They are quite capable of exercising these skills.

Personality Changes

It would be folly to consider the development of personality removed from a social setting. It is in this context that a youngster develops an understanding of who he is, what he is, what he is capable or incapable of doing, and his relative value in this world now and in the future. This is what has come to be known as the "self concept." This concept of self is based on an internal frame of reference from within the boundaries of the individual's own skin. It may be quite different from the concept other people have of him. To his family and friends he may appear to be an average student, a nosey pest, the boy most likely to make Eagle Scout, or the best sandlot slugger in the neighborhood. He may view himself as a butterfingered, clumsy boy who is not quite big enough or smart

enough, who is interested in becoming a "private eye," and as a less-than-acceptable speaker who would rather risk the wrath of his teacher than suffer the embarrassment of the newly-acquired and horrible squeak that suddenly and unexpectantly sounds when he asks or answers a question in class. He may not like the way he looks or sounds or the way he tries to do things right but never seems to be able to please anyone.

Changes in the self concept occur slowly and gradually. During early childhood, the home and the neighborhood (and what he sees on television) are most of his world. When he enters school, this world broadens. During the transescent years the youngster is neither a child nor an adolescent. Parents and other adults are no longer as important as they once were. He still loves and respects his parents, but he feels that parents no longer understand him. Teachers, who were formerly viewed as supreme authorities, begin to have some perceivable faults to accompany their virtues. The transescent can differentiate the qualities of teachers he admires and those he dislikes. He recognizes that the teacher who is interested in him, who is fair, who has a good sense of humor, and who is knowledgeable of his subject area is an asset. Most transescents, however, begin to sever the accepting and dependent relationship with the teacher. They are influenced by the behavior of teachers in terms of the effect of such behavior on them. Each act of teacher behavior directed toward the transescent affects his understanding of himself.

As his self concept is developing, the transescent is also learning his sex role. This is the basic process through which the youngster learns to think, to feel, and to act in a manner which is expected of his

particular sex. Boys, in our society, are expected to be loud, rough, untidy, aggressive, and adventuresome; girls, in contrast, are expected to be quiet, docile, and neat. The range of behavior which is acceptable for males is much more restricted than for females. Girls may be tomboys or ladies. They may wear jeans or crinoline. Boys have no such flexibility. To be a "tomboy" is acceptable and is viewed as something the girl will eventually outgrow. In reality, this often comes about through peer pressure during the girl's adolescent years. But to be a sissy is something the boy will live with for a long time, and he is likely to be ostrasized by adults and peers alike.

With the onset of the transition period, boys begin to reject maternal ties and to seek rugged, active, aggressive maleness and models they can emulate. Boys feel it is important to disassociate themselves from any sign of female interest or control. The identification of the sex role during these years does not seem so crucial for the girl, who has been exposed to female interest and control during most of her life both at home and at school. Hers is not a shift from opposite six interests to identification with an adult of the same sex. For many male transescents, however, this is a major problem the proportions of which they have never confronted to this degree at any time during their earlier lives.

During the time of the search for the sex role and the rejection of adult influence, the peer group begins to be viewed in a different light. Both boys and girls are keenly aware of sex differences. Males, however, are more likely to express antagonism for girls than girls do for them. Close friends are of the same sex.

The peer group offers a sort of security in that the youngster can do what everyone else is doing. The influence that the peer group has over the behavior of the transescent may disturb his teacher. Not only is the child less willing to accept his teacher as the sort of minor deity he has formerly been, but many children will be willing to endure punishment from the teacher in order to retain their places in the peer group. At times the child may deliberately seek the teacher's disapproval because this sort of behavior is expected by the group in which he seeks membership. To be different or unaccepted during these years is to be doomed!

During the years of transescence the youngster is changing from emotional behavior which can be described as contented and amiable to that displayed by an often aggressive, belligerent, and argumentative individual. Emotional behavior fluctuates frequently. At one meeting he may seem hurt, sad, jealous, or competitive; at the next, worried, cheerful, affectionate, or timid. His anger is more intense and deeper than that of the younger child, and he may strike out with more fervor. It takes him longer, also, to recuperate from emotional outbursts. Tears are usually standing in the wings waiting for the right cue.

Difficulty in learning to cope with his growing and changing body, with a new mode of intellectual functioning, and with the paradox of his desire to be an individual and his desire to be accepted by the peer group present a tremendous problem of adjustment for the transescent. Behavior of an emotional nature can be traced to one or several of these changes. During no other period of human growth and development are youngsters required to adjust themselves to so many changes simultaneously.

THE SCHOOL PROGRAM

The uniqueness of the transescent group demands a program which is based on their varied needs. Until the 1960's we had never been concerned about designing school programs especially for them. In many ways the transescent group has been relegated to the role of stepchild in the elementary program designed for younger children and in the junior high school, which has aped the senior high school. Dacus (1963) studied the social, emotional, and physical maturation and opposite sex choices of pupils in grades five through ten. He found the least differences between students in grades six and seven and those in grades nine and ten -- the very years at which we assign youngsters to different kinds of organizational patterns based on what we knew about children six decades ago!

These youngsters need a type of school program designed specifically for them, a program in which their differences and their needs are taken into consideration by adults who know, understand, and, most important of all, who like them.

Certain implications for the educational environment can be drawn from the nature of the learner himself. It must be remembered, however, that the nature of the middle school should vary from one locale to another. Communities differ by virtue of their variation in population. Therefore, a middle school which would be appropriate for one school district might be impractical for another. Curricula should be devised for the specific group of youngsters to be served.

Although there should be differences in the program for each middle school, there are certain general components which are appropriate for all middle schools:

1. The trauma of the transitional period may be eased through articulation (in reality and not just on paper) with the elementary school and the high school. This might necessitate a quasi self-contained classroom organization during at least a portion of the school day for the first semester in the middle school.
2. Since these youngsters can benefit from instruction by specialists, they recognize competence in teachers, they enjoy variety, and they are capable of understanding the relationship between the various subject areas, team teaching by subject area specialists in a single field or across several fields would seem indicated.
3. A change in the manner in which transescents view adults calls for specially trained teachers who understand them, who like them, and who know their subject fields as well as the relationship of these fields with others.
4. Differences in developmental rate, academic ability, and interests call for times when youngsters can work alone. Skills laboratories staffed by technologists with subject matter competencies could provide remedial, developmental, and advanced instruction in such skills as reading, listening, writing, mathematics, science, foreign language, art, music, and physical education.

5. Tanner (1961) suggests that grouping be based in some subjects on developmental levels. This is especially true of physical education classes in which prepubescent boys should not be expected to compete with the pubescent boys. Gordon (1969) suggests that locker room facilities be designed to provide privacy for youngsters who are likely to be sensitive about their physical development.
6. The importance of the peer group during these years warrants grouping of from ten to fifteen at times. Small group discussions should supplement large-group instruction so that youngsters may explore ideas, ask questions, and pursue in greater depth hypotheses triggered in the large-group sessions. An interested and well-prepared teacher should be available for clarification but should not dominate group interaction. A second type of small group should replace the homeroom group, but it should not assume its role. This group should be assigned to a teacher with special preparation in guidance and counseling who can provide the opportunity for youngsters to discuss problems of special importance to them (and selected by them) and to counsel with youngsters who have individual problems which may not be severe enough to be referred to a full-time professional guidance worker. During group discussions this teacher should serve only as a director of verbal traffic and as a clarifier.
7. There should be an activity program in which each youngster will be able to participate. This program should be based on personal

development of students rather than on the enhancement of the school's prestige or the entertainment of the public. Inter-scholastic athletics, marching bands, cheer leaders, graduation, and other activities which are junior versions of the high school have no place in a middle school for transescents.

8. Each youngster, because of his unique interests, needs, and abilities, should be scheduled individually into a program tailored specially for him. Without the presence of the ninth grade, the spectre of the Carnegie unit is also missing. The program is, therefore, free to vary greatly for transescents of the same chronological age. True nongrading or continuous progress types of vertical organization are possible without the dominance of six or seven neatly-tied packages of fifty minutes' duration five days a week as imposed by the Carnegie unit.
9. Evaluation should be based on individual progress rather than on a punitive grading system which has been waved like a club over the heads of many youngsters. This evaluation should be a guide for youngsters and teachers in planning co-operatively future experiences as well as in informing parents of the progress of their children.

SUMMARY

The transescent group, the ten-to-fourteen-year-olds, are unique in their variation. They differ within the total group, within sexual groups, and within themselves from one day to the next. They are undergoing changes in physical development, intellectual functioning, and in

personality structure. They require a program which is based on their nature. The middle school is in a unique position to offer such a program.

No one can guarantee that the middle school will provide a panacea for the ills of transescent education. It would be futile to view it as such. It has the potential to be the catalyst for change on all educational levels. If it does not provide the kinds of education required for transescents, it should not become so firmly entrenched that it will take half a century to find an alternative as has been the case with the junior high school.

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Middle schools in perspective: Historical growth and development

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HISTORICAL GROWTH

In those sections of the nation providing both elementary and secondary education during the mid 1800's, the 8-4 grade-level organization was almost universal. What were the causes of restructuring which brought the familiar 6-3-3 plan to the forefront for so many decades? Although their influence cannot be denied, the impact of various societal developments such as tremendous overcrowding and child labor laws can only be surmised. Certainly they added momentum to the impetus developed within organized education. The downward extension of secondary education which eventually resulted in 6 years of elementary school and 6 years of secondary education was largely motivated by forces emanating from the university level. Dr. Charles W. Eliot, President of Harvard in the late 1800's, sparked the National Education Association with his concern that American college graduates were much older than their European counterparts and proposed that earlier secondary education would provide economy in time. The net result of the downward extension of secondary education would be that students would be entering the universities after 10 years instead of 12. In fact however, the 2 remaining years of secondary education were retained and the 6-6 distribution of elementary and secondary education went on to gain extremely wide acceptance.

Reporting between 1894 and 1918, no less than 5 national committees and commissions working under the auspices of the National Education Association considered reorganization and rationale. Some of their recommendations included: extending secondary education to include grades 7 and 8, thus providing an intermediate unit to serve as a bridge between the elementary and high school; retaining the 7th and 8th grades in the elementary school and introducing a few high school subjects; and finally, dividing secondary education into a junior and senior high school--the junior high school housing students aged 12-15 years and the senior high school encompassing the 15 to 18 year old (Alexander, Williams, Compton, Hines, Prescott, & Kealy, 1969, p. 45).

Complementing the administrative arguments concerning reorganization was the feeling on the part of many psychologists (most notably G. Stanly Hall) that the 12 year olds should face a three-year unit of schooling with their peers due to the developmental characteristics of the adolescent (Koos, 1929, p. 5).

The dawn of the junior high school movement began in 1909-1910 with schools in Berkely, California, and Columbus, Ohio. By 1917 there were at least 272 such schools in the nation and recent estimates place the present number in the vicinity of 6,500 to 9,000 - amply illustrating massive reorganization!

While the original motive might have been to provide economy in time (i.e.: secondary education at an earlier age thus permitting earlier entrace to college), three major purposes evolved: (1) to form a bridge between the elementary school with its self-contained classroom and the highly specialized program of the senior high school - articulation,

(2) to provide exploratory experiences for its students in order to allow youngsters to sample various subject areas before making a commitment to a specific program in the senior high school - exploration, and (3) to provide guidance services as an aid in academic, vocational, and personal matters.

How then does it happen that an organization so firmly entrenched with common purpose and wide acceptance finds itself in the throes of metamorphosis? One could hardly deny that these three purposes (articulation, exploration, and guidance) are as valid for the school in the middle today as they were some 60 years ago.

Commenting on these purposes and the 6-3-3 plan, Alexander et. al. say:

> Had the junior high school really achieved these purposes, and had the elementary school program provided adequate adaptations for its older pupils, the 6-3-3 plan might have had little challenge [Alexander et. al., 1969, p. 46].

In fact however, there seems to be a viable challenge to the 6-3-3 plan and the traditional junior high school it spawned. The reasons underlying this new movement are as many and complex as those which gave rise to the junior high school movement of the early 1900's. In examining this trend, Theodore C. Moss (1969, pp. 39-40) identifies at least four areas of discontent which include: (1) the Carnegie Unit which seemed to preclude anything but rigid adherence to four-year course sequences whose inclusion greatly influenced the 7th and 8th grades, (2) the rising emphasis placed on imitating the social and competitive aspects of the high school including its rigid departmentalization, (3) a lack of teachers specifically prepared to work in the junior high school, and

(4) a tendency in larger cities to house segregated school populations in junior high schools and the potential for integration in the four year high school at an earlier age.

When we add to these potential sources of discontent, evolving theory and recent research from the physiological, cognitive, and psycho-social developmental areas (discussed elsewhere in this issue), there seems to be adequate pressure for change. The fact that change is occurring can be documented by considering the following five surveys regarding the growth of various grade-level organizations which support realignment along middle school lines.

Cuff (1967) using a sample of 44 states in the 1965-1966 school year identified 499 schools in 446 school districts which ". . . had grades 6 and 7 and did not extend below grade 4 or above grade 8 [p. 82]."

Surveying the 1967-1968 school year, Alexander (1969) reported identifying 1101 middle schools in the 50 states and District of Columbia which were defined as: "a school which combines into one organization and facility certain school years (usually grades 5-8 or 6-8) which have in the past usually been separated in elementary and secondary schools under such plans as the 6-3-3, 6-2-4, and 6-6 [p. 163]." These schools met the further requirements as ". . . having at least three grades and not more than five grades, and including grades 6 and 7 . . . [p. 166]." It is interesting to note that nearly 90 percent of these schools were formed after 1960!

Hunt, Berg, and Doyle (1970) surveyed the 1968-1969 school year and reported on middle schools defined as ". . . usually beginning with the 5th or 6th grade and not extending past grade 8 [p. 170]." Data from only thirty-eight states showed 1,946 middle schools which were either

5-8, 6-8, or 7-8 traditional grade-level organizations (p. 172). It should be noted that the 7-8 school would not be included in the Alexander survey definition.

Mellinger and Rackauskas (1970) undertook a most comprehensive survey of the 1969-1970 school year through a questionnaire designed to obtain data regarding both numbers and qualities of middle schools.

Applying the definition of a middle school as: "A school for pupils in grades 4 through 8, with at least two but not more than five grades, including grades 6 and 7 or 7 and 8," Mellinger & Rackauskas (1970, p. 16) tallied 1,696 such schools. However, when the "Alexander Criteria" (i.e.; omitting the 2 grade only schools) is applied, this total would be scaled down to 1,294 (Mellinger & Rackauskas, 1970, p. 3).

Using the same grade-level definition of middle schools as was used in the Alexander survey, Kealy (1970, p. 1) undertook a resurvey of reorganized middle schools during the 1969-1970 school year. Data from the 50 states and the District of Columbia provided a total of 2,267 such schools.

Table 1 indicates the growth of schools in the state of Georgia which have grade-level organizations generally encompassing the middle school age population.

Table 1

Number of Middle Schools* in Georgia from 1967-1968 to 1971-1972

'67-'68	'68-'69	'69-'70	'70-'71	'71-'72
24	**	29	81	98

* School having at least three grades but not more than five grades and including grades 6 and 7.

** Data not available.

In examining the totals listed in Table 1, it should not be assumed that each of these schools represents a deliberate attempt to implement middle school philosophy, or that each was reorganized specifically for the purpose of presenting an appropriate grade-level group. While it is impossible to detail the primary motive which lead to these organizations, it is safe to assume that many of them represent administrative expendiencies stemming from overcrowding, segregation orders, financial concerns, and other considerations.

Kealy's (1970) 1969-1970 survey revealed only 2 schools in the state of Georgia which used the term "Middle School" in their titles. During the 1971-1972 school year, a total of 20 schools in 14 counties using the term "Middle School" in their titles were listed in the Georgia Educational Directory (1971).

While one might certainly question whether this reorganization really indicates any real change in program, on the basis of the five previously cited surveys and the data regarding the state of Georgia, one must agree that there has been a rapid proliferation of this grade

level organizational concept both throughout the Nation and the state of Georgia.

Thus far the historical growth of the middle school movement as an organizational alternative has been documented. Let us now take a look at the development of the middle school movement in terms of philosophic rationale and its fulfillment.

MIDDLE SCHOOL DEVELOPMENT

Each of us knows that simply naming a school a middle school, or arriving at a grade-level combination which seems indicative of a middle school does not necessarily make any difference in the areas of articulation, guidance, or exploration. There must be more to it than that! We do know from various surveys that middle schools usually contain the 6th, 7th, and 8th grades. They usually require science, mathematics, language arts, and social studies, and offer art, music, industrial arts, physical education, and home economics. And we even know that in those schools containing the 5th grade, the self-contained classroom is the mode for that grade with departmentalization becoming frequent in the 6th grades and the rule in the 7th and 8th grades. But then, these might be the same characteristics of countless thousands of junior high schools.

Are middle schools indeed different in detectable ways from junior high schools? Has this organizational restructuring resulted in innovative practices? Do middle school students differ in their self-concepts and achievements from junior high school students? These are difficult

questions. One might well make a strong case for refraining from comparisons at all on the basis of two entirely different populations and purpose. However, if you accept the three previously mentioned purposes (articulation, guidance, and exploration) as being appropriate to both, and if you accept some of the potential contributors to discontent with the junior high school (Moss, 1969, pp. 39-40) as traditionally known, then you must seek answers to these questions.

While few comprehensive surveys have attempted to ascertain both the philosophic rationale and its fulfillment within the organizational patterns thought to represent the middle school, there are two which shall be examined briefly.

The comprehensive survey by Alexander (1969) during the 1967-1968 school year solicited information from identified middle schools regarding: (1) numbers, locations, grades included, enrollments, plant housing accommodations, and articulation plans, (2) establishment data, (3) curriculum, (4) various instructional organizations, (5) individualizing instruction arrangements, and (6) reactions of staff, parents, students, and the general public.

Each of these areas was examined in detail through a survey instrument using a 10 percent sample of the 1,101 identified middle schools.

While the most frequently cited reason for establishing the middle school was given as the need to eliminate crowded conditions in other schools (given by 58.2 percent of the sample), providing a program specifically designed for students in this age group and to better bridge the elementary and high schools were the next most frequently mentioned (44.6 and 40.0 percent respectively).

Grade-level organization involving the 6-8 combination was used by 60 percent of the sample while the 5-8 combination accounted for 27.3 percent with various other arrangements making up the remaining 12.7 percent.

An overwhelming number of the sample schools concerned required language arts, social studies, science, mathematics, and physical education throughout their grade pattern. The majority reports showed a 100 percent requirement in these areas across grade-levels. The lowest percentage of these areas were for 7th grade science with 95.3 percent requiring it and for 6th grade physical education with 95.3 percent requiring it. Art, music, industrial arts, and home economics were also required by substantial numbers of the schools with art and music most frequently required in 5th and 6th grades and industrial arts and home economics most frequently required in 7th and 8th grades. A foreign language was required at about the 30 percent level across grades.

In terms of instructional organization, the self-contained classroom is the typical organization in half or more of the schools which include the 5th grade -- departmentalization becoming frequent in the 6th grades and the rule in the 7th and 8th grades. Some form of variable or modular scheduling was reported by 29.6 percent of 108 reporting schools and some independent study arrangement was reported by about 20 percent.

The most frequently cited articulation mode involved student data exchange (90 percent) with well over a 50 percent frequency rate for various interactions such as joint workshops, curriculum planning activities, and visitations on the part of both staff and students. The

homeroom teacher was most frequently cited as fulfilling the counseling function (54.6 percent) with the use of full-time counselors checked 47.3 percent.

In addition to obtaining base line data, several other questions of interest were explored. For instance, those schools which indicated that they were established to remedy the weaknesses of the junior high school were examined in terms of interschool athletic programs and grades 7 and 8 instructional programs since the literature indicates that these are two areas of concern to middle school advocates. When comparing schools checking the "to remedy weaknesses" reasons for their establishment with those schools which did not indicate this reason, little difference was found in either area. The authors comment that either these items were not regarded as weaknesses or were not eliminated for other reasons. It was concluded that the survey schools did not generally reflect middle school aims as found in the literature and indicated by the sample schools and that the general program of studies tended to closely approximate those of the predecessor organization (Alexander et al., 1969, p. 185). In spite of these conclusions, however, there were encouraging signs that program changes were occurring. Some of these signs were: the adoption of flexible scheduling; independent study arrangements; team teaching; and a general attitude which reflected genuine interest in providing a period of schooling which was specifically tailored to the child in the middle.

Mellinger and Rackauskas (1970) not only attempted to determine the number of middle schools during the 1969-1970 school year, but the degree of their fulfillment of middle school philosophy. Utilizing a survey

questionnaire of 1,988 middle schools and a stratified random sample of 275 elementary and 91 junior high schools they sought information regarding organizational arrangents, class schedules, discipline, study arrangements, athletic and social activities, exploratory course offerings, and pupil-support by administrators, teachers, and counselors.

The degree of fulfillment of philosophy was ascertained by comparing data to a model middle school with the following characteristics: (1) grade span of 6-8, perhaps including grade 5; (2) pupil-counselor ratio of 200:1, pupil-administrator ratio of 400:1, and a pupil-teacher ratio of 19:1; (3) learning resource center and study carrels; (4) flexible scheduling, independent study program, and student seminars; (5) emphasize problem-solving and discovery techniques; (6) broad array of exploratory courses; (7) emphasize intramural athletics; and (8) shun after-school social dancing and proms (Mellinger et. al., 1970, p. 3).

Survey data show that of the 350 self-styled middle schools, 78.6 percent were 5-7 through 6-8 grade-level organizations and the frequency of middle schools which included either grade 4 or grade 9 was exceedingly small.

In the pupil support area of pupil-administrator ratios, the 5-7 through 6-8 organizations reported 50.2 percent with ratios of 400 or less while the 7-9 junior high schools reported 61.8 percent meeting this criterion. Percentages of respondent schools exhibiting the criterion measure of 200 or less in the pupil-counselor ratio were so small as to lead the investigators to question the validity of this figure as an optimum level. Increasing this ratio to 400:1 yields 22.3 percent of the 5-7 through 6-8 schools and 36.6 percent of the 7-9

junior high schools-again placing the middle schools below the junior high schools. Finally, considering the pupil-teacher ratio 26.5 percent of the middle schools met the criterion while 28.1 percent of the junior high schools fell into the same category. These data led the investigators to conclude that none of the three ratios of pupil support indicated that that middle schools differed substantially from non-middle schools (Mellinger et al., 1970, p. 11).

Relationships between size of schools and the support ratios indicated that the larger schools generally had more favorable ratios in the areas of pupil-administrator and pupil-counselor ratios while the pupil-teacher ratios of 20-25 pupils per teacher applied in the largest proportion to all grade-patterns.

Only 15 percent of the middle schools reported having some arrangement which included elements of flexible scheduling and 57.9 percent of the middle schools reported having either modern study arrangements (such as a learning resource center, and study carrels) or a combination of more traditional arrangements with these as opposed to 52.5 percent of the junior highs. In the area of athletics, 32.1 percent of the middle schools reported having intramurals only and 11.8 percent reported having adult only social activities. However, when all factors were taken into account, there did not seem to be a significant difference between the middle schools and the junior high schools. The authors noted that in general, few schools of any pattern were providing a wide variety of exploratory activities.

Finally, 35.1 percent of the respondents indicated that they had a middle school program and 36.4 percent said that they were moving toward

a middle school program while the remaining 28.5 percent said that they did not have a middle school program (Mellinger et al., 1970, p. 29).

In spite of the general failure to find significant differences between the middle schools and the junior high schools in this study, there is cause for studied optimism. The fact that 36.4 percent of the respondents indicated that they were moving toward a middle school program and that 28.5 percent said that they did not have a middle school program indicates an awareness that more than a simple grade-level combination is required to realistically tackle the problem of an appropriate period of schooling for the in-between-ager.

A number of additional research studies have been carried out in attempts to compare middle schools with their elementary and junior high school counterparts on a variety of factors related to such items as: pupils' self-concepts, activities, instructional organization, curriculum plans, administrative function and a host of others (Tobin, 1970; Glissmeyer, 1969; Constantino, 1970; Gatewood, 1971; Davis, 1971; Schoo, 1971; Elie, 1971; Mooney, 1970; Trauschke, 1970; Soares, Soares, and Pumerantz, 1971).

While these studies report isolated instances of significant differences (some in favor of the junior high schools and some in favor of the middle schools), generally speaking, the researchers found no significant differences on the items previously cited. One of these studies is particularly disconcerting to proponents of the middle school. Soares et al. (1971) reported on their research into the self-perceptions of 1,200 pupils in grades 6 to 8, representing five traditional schools and five middle schools. They found significant differences in the self-concept,

ideal self-concept, reflected self-concept from classmates, and reflected self-concept from teachers, which favored the traditional schools at all grade levels. Obviously these results are completely contrary to the hopes of middle school advocates.

IN SUMMARY

Briefly tracing the historical developments in the middle of the educational ladder from the search for economy in time through discontent with the evolution of the traditional junior high school we have seen the inconclusive nature of the research (scanty at best) regarding the efficacy of the middle school movement. Is this cause for pessimism? This writer does not think so. Within these reports are indications of an honest attempt on the part of educators to structure an appropriate period of schooling for the child in the middle. Perhaps the real strength of the middle school movement lies in the fact that nothing is settled - that we are witnessing a rebirth of interest in exploration and experimentation aimed at providing the best possible period of schooling for the child in transition from childhood to adolescence.

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The middle school - promise or fad?

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On the scene today is a movement in education which is gathering momentum. This movement may be referred to as the "Middle School Movement." In its organizational pattern the middle school is distinguished primarily from the junior high school by its inclusion of younger children, usually grades 6 through 8 and at times grades 5 through 8.

George Santayana once observed that in our changing world we no longer salute our ancestors but bid them goodbye. Before commenting on the middle school movement it might be helpful to briefly sketch the junior high school situation with which the middle school is currently contending. The junior high school movement was broadly based in its beginning days and was influenced by both trends and countertrends. Eminent psychologists provided a psychological rationale and justification for the development of the junior high school. Lounsbury and Vars (1971, p. 13) report that public school educators supported the junior high as a means of "bridging the gap" between elementary and secondary programs and hoped through the introduction of vocational education to make schooling more relevant to daily life. Civic and government leaders are reported to have seen the junior high school as a possible solution for societal problems (Lounsbury & Vars, 1971, p. 13). Taxpayers often saw the proposed junior high school program as a means of saving money through the elimination of repeaters as well as a means of eliminating the overcrowding of buildings. How well has the junior high school program succeeded? Most authorities would agree that the junior high school

has served rather well as a vehicle for educational innovations such as core curriculum and team teaching; however, educators believe that generally it has failed to implement broadly the full hopes of its supporters. In the area of administrative organization the junior high school has achieved tremendous success:

> As early as 1930, nearly half of all secondary pupils were attending reorganized schools. Today we estimate that nearly 80 percent of America's pupils go through some form of intermediate school [Lounsbury & Vars, 1971, p. 14].

> In this numerical success, the junior high school is so like America generally. As a people, we have been "quantity" successful beyond all anticipation; yet a "quality" success continues to elude us . . . We have organizational and technological answers in abundance, but often they do not solve the fundamental human problems [Lounsbury & Vars, 1971, p. 14].

The attack currently being leveled at the junior high school is that it is too much like the senior high school. It is claimed that in today's junior high school the athletic program, bands, social activities and the instructional program all look like they have been lifted out of a high school program. Lounsbury and Vars (1971, p. 14) report that the junior high school is charged with failure to provide a program, both academic and social, that is geared to the needs and characteristics of the emerging adolescent. If this charge be true, then we very well deserve to bid the junior high school ancestor goodbye without further fanfare.

Will history repeat itself? Will the middle school follow the same course which its educational ancestor the junior high school has followed? Much of the rationale, and many of the underlying assumptions of the middle school movement are similar to those of the junior high school in its earlier stages. Where did the junior high school go wrong? If we

had an opportunity (as perhaps we do with the emerging middle school program) to preserve a particular theoretical component of the junior high school which component would we labor to save? Would it be the grade organization (already rather firmly established)? the attempt at a vocational emphasis? the guidance function? or the potential changes in instruction? Or could it be that it is impossible to deal with one component separate from the others in the program package?

Just as the junior high school movement brought about a certain number of changes in the educational program perhaps the greatest challenge of the middle school program is in its potentiality for bringing about program improvements and changes. In the following section some attention will be given to using the middle school program as a vehicle for bringing about curriculum change.

CHANGING THE CURRICULUM

A study of curricular changes in elementary and secondary schools led Gordon Mackenzie (1964, p. 402) to redefine the term curriculum as the learner's engagements with various aspects of the environment which have been planned under the direction of the school.

> The assumption here is that engagements can be observed and to some extent controlled. The word engagement is used to mean what the learner meets face-to-face, what he attends to, or what he is involved in. . . . Obviously there can be engagements with teachers, classmates, or others; with physical factors such as materials and facilities; and with subject matter, ideas or symbols! The method or procedure followed may pattern the engagement. The time allocated may influence the engagement in numerous ways. Specific engagements may appear to be primarily intellectual, emotional or manipulative /Mackenzie, 1964, p. 402/.

The focal points for change or the determiners of the curriculum as outlined by Mackenzie are (1) teachers, (2) students, (3) subject

matter, (4) methods, (5) materials and facilities, and (6) time. Mackenzie (1964, p. 402) concludes that to change the curriculum is to change one or more of these six components.

In examining middle school program models it becomes evident that if the models as outlined were to be implemented then each of the six determiners would be affected and consequently many curriculum changes would occur. Let us take a look at a particular middle school program model (Mullen, 1972, pp. 8-13) in relationship to the six determiners of the curriculum identified by Mackenzie.

TEACHERS

When one considers the curriculum definition to be the learner's engagements with various aspects of the environment which have been planned under the direction of the school, then it is evident that it is impossible to have curricular changes without involving teachers. The middle school program calls for changing teachers' assignments, roles, and including additional staff positions to provide unique instructional functions as called for to implement the middle school program. Mullen (1972, p. 8-13) suggests the following staff considerations in implementing a middle school program.

1. Through a homebase, advisory, or special arrangement such as a block of time, each learner spends a substantial amount of time with one teacher-counselor to whom he can turn for information and assistance concerning matters affecting his life.
2. The advisor refers the pupils as needed to a variety of special services including: counselors, psychologists, medical and social services, and other teachers - special and academic.

3. Staff should utilize the services of pupils, student teachers, teaching interns, and paraprofessionals such as teacher aides, clerical aides, and technicians.
4. There should be some combination of the self-contained unit with teaming. Assigning the pupil to a home base with a designated teacher-counselor provides some of the advantages of the self-contained classroon. If team teaching is used, the teacher-counselor is one of the teachers on the team to which the pupil is assigned.
5. Team teaching permits the advantages of the graded organization wherein subject matter teachers can bring their own specialized knowledge to bear on an interdisciplinary approach to learning. One plan for interdisciplinary teaming is to have three teachers (math, science, social studies, language arts) working with 75 or so students.
6. Teachers competent in areas such as reading, art, music, foreign language, home arts and career education, and physical education are needed in the middle school program.
7. Support staff including community coordinators, resources personnel who assist faculty and pupils retrieve information and provide resources for learning, as well as guidance, and measurement and evaluation specialists are needed in the program.

STUDENTS

Changes in the personnel of student groups is a means of changing the interactions in teaching-learning situations and thus influencing the engagements of learners. Some of the ways of altering compositions

of class groups are: changing the composition of the school population, shifts in the bases of grouping (homogeneous, heterogeneous, or inter-age), changes in class size, and special arrangements to deal with special interests and special problems. Mullen (1972, pp. 8-13) recommends the following as ways of changing pupil arrangements in the middle school program.

1. The grades 6, 7, and 8 include a significant number of pupils who reach pubescence and is the most practical arrangement for most middle school programs.
2. When pupil population in the middle school begins to exceed 600, then attempts should be made to facilitate decentralization into a school (s) within a school.
3. Neither the typical horizontal pattern of the elementary school (self-contained classroom), nor the typical horizontal pattern of the secondary school (departmentalization) is completely adequate for the middle school. Therefore, there is a need in the middle school for a nongraded, or multiage, or continuous progress system, or a system in some way combining these plans.
4. Pupils should be placed in groups based on an assessment of their intellectual, social, emotional, and physical development. By placing pupils in multiage groups greater individualization of instruction may occur.
5. For those pupils who need special instruction in such areas as reading, math, study skills and writing, some special arrangements such as the establishment of skills laboratories should be made.

SUBJECT MATTER

In the Mackenzie (1964, p. 404) study changes in the curriculum were most frequently referred to as changes in subject matter. Pupils' engagements in the school are most heavily concentrated with content. Content or subject matter can be altered in innumerable ways. Modifications can range from gross types such as the addition of subjects to the educational program, to more limited forms such as different emphases in traditional subjects or recombinations of these subjects. Mullen (1972, pp. 8-13) suggests the following subject matter changes for the middle school program.

1. Subject area planning teams including the home-base teacher should identify some of the major generalizations in the various subjects which lead to the understanding of people and their ways of living.
2. Emphasis should be on applications of math and language skills and of basic concepts in science and social studies to everyday activities and problems.
3. The program in subject areas should provide opportunities for pupil investigations which lead them to understanding basic concepts in the various disciplines and especially in mathmatics and science.
4. Emphasis in literature and the arts should be in understanding the role of these subjects in the development of communication and culture.
5. Career exploration should be a major part of the middle school program. Efforts need to be made to make this area a major

focus and whenever possible the other subjects should be used to undergird this program emphasis.

6. Through the home-base group or by some shared plan developed by the school faculty emphasis should be given to the health requirements of the pupils, to the development and complexities of the human reproductive system and to health and safety practices appropriate and important to the "in-between-ager." Plans should also be made for developmental and corrective mental and physical health services.
7. The physical education program of the middle school should promote the physical, social, and emotional well-being of the individual. It should stress individual development with competition in team sports through an intramural program. The program should include those activities which provide coeducational experiences such as dance, camping, and bowling.
8. Through exploratory courses, activities such as mini courses and other arrangements, each pupil should have the opportunity to explore a wide range of interests in the arts, in career occupations, and in leisure time activities.

METHODS

An important area that affects the engagement of pupils in the teaching learning process is the method or manner or means by which something is taught or learned. As with the other determiners of the curriculum method is inextricably interwoven with the other five. Changing the role of the teacher from a self-contained classroom into a team-teaching situation dictates a change in method for those teachers involved. Grouping

of pupils in certain arrangements calls for a method appropriate to the nature of the grouping practice. Materials and facilities changes often require change in method as does the introduction of new subjects and new combinations of subjects. The methods which are recommended as important for implementing the philosophy of the middle sc[illegible] program as detailed by Mullen (1972, pp. 8-13) are outlined in th[illegible] following section.

1. Every effort should be made to individualize instruction. In this connection it is important to involve the learner in setting his own and group goals, determining how they will move toward them and in evaluating their attainment.
2. The home base program provides opportunities to give continued and intensified focus on value development. All such experiences should be based upon issues and problems real to pupils in and out of school. The issues arising daily in the lives of students, in the school, the community, the nation and the world should be identified and considered. Alternative positions with understanding of influencing conditions should be explored and consequences of preferred positions clearly understood in dealing with such issues.
3. The faculty should provide leadership through a diagnostic and prescriptive approach to determine which skills need be emphasized in all learning situations and which be given independent consideration and by whom and in what arrangements. Special emphasis needs to be given to communication, critical thinking and problem solving skills.

4. As individuals, and especially in both small and large groups, ways of thinking about and attacking questions and problems should be stressed as to yield reliable answers and solutions.
5. The teachers in the middle school should be willing to focus primary attention on the developmental aspects of the educational process utilizing subject matter to accomplish this purpose.
6. Staff should be willing to work on interdisciplinary and inter-service teams.

MATERIALS AND FACILITIES

Materials are unquestionably a very significant part of the learning environment, their presence or absence, and the ways in which they are used are all significant in determining the curriculum. Many of the content emphases and additions recommended for the middle school program can not be carried out without the addition of supporting instructional materials. Equally important and significant are the middle school program demands on facilities. Some of the middle school space requirements are for independent study, programmed instruction, electronic media, storage, conference rooms, large and small group instruction spaces, teacher and pupil work areas, spaces for supportive staff and services, and community use. Some of these facility needs are outlined by Mullen (1972, pp. 12-13) in his middle school program guidelines.

1. Middle schools need carrels for individual study, conference rooms for small groups, and larger areas for groups of 75 or so.
2. Learning resources centers should be available to all instructional spaces.
3. There is a need for spaces which permit social interaction.

4. Spaces are needed that can be used for special instructional centers or laboratories.
5. There is a need for adequately equipped spaces for instruction in the various career exploratory and personal development areas as well as recreational and physical development activities.
6. The school plant should be zoned to permit practical use of the building by pupils and adults for community use.
7. Arrangements need to be made as regards food service so as to facilitate maximum program flexibility.

TIME

An increase in the time allotment for a subject, or a decrease in the time given, or tampering with the length of the school day, or changing the school schedule, as well as providing time for special opportunities for pupils all have potentiality for modifying the learner's engagements, and thus the curriculum. Some of the ways a middle school program can bring about alterations in the schedule are as follows.

1. Teaming pupils and teachers suggests the need for scheduling learning experiences into large time blocks based on planned activities scheduled by the team within the block
2. There is a need to schedule team planning time within the day.
3. Recreation breaks and special activity groupings should also be scheduled by the team within the block.
4. Pupils should have opportunities for independent study. These opportunities might permit in-depth study done in conjunction with regular classwork or in response to a pupil's own interest

or need arising from home-base activities or elsewhere. Some unscheduled time may be needed to do these independent study projects.

IMPLICATIONS

The middle school program is primarily concerned with matters of organization and changes in program emphases. It is for this reason that the middle school program offers great potential for changing the curriculum in grades 6, 7, and 8 because as has been pointed out in the above section change in the organizational structure of schools at the middle school level call for many changes in the determiners of the curriculum. The danger appears to lie with school systems who adopt the label middle school, but which make no conscious, deliberate effort to change the determiners of the curriculum. If schools merely reorganize their pupil populations to accommodate grades 6, 7, and 8 and make no attempt to redefine the role of the teachers, the groupings and interactions of the pupils, the content and emphases of the subject matter, the methods of instruction, the materials and facilities used, and the schedules; then, there is little likelihood that much will happen in the way of changes in the curriculum. Mackenzie (1964, p. 405) found that change efforts focused solely on teachers did not appear to bring about change, but that many changes appeared to have occurred through a major emphasis on pupils, materials, facilities and time allocations. It seems that where the focus was on determiners other than teachers, there were changes and adjustments required of teachers which they were able to handle individually.

INSTITUTING MIDDLE SCHOOL PROGRAMS

Chin and Benne (1969, pp. 32-58) define three general strategies for effecting change in human systems. One group they define as empirical-rational strategies. In using an empirical-rational strategy it is assumed that men are rational and that they will follow their rational self-interest once this is revealed to them. Under this strategy a change is proposed by some person or group which knows of a situation that is desirable, effective, and in line with the self-interest of the person, group, organization or community which will be affected by the change. The underlying assumption is then that because the person or group is rational and moved by self-interest that he or they will adopt the proposed change if it can be rationally justified and if it can be shown by the proposer(s) that he or they will gain by the change.

A second group of strategies are defined by Chin and Benne as normative re-educative. In these strategies the rationality and intelligence of men are not denied but they assume that patterns of action and practice are supported by commitments on the part of individuals to these norms. According to this view changes in a pattern of practice will occur as the persons involved are brought to change their attitudes, values, skills, and significant relationships. Changes in knowledge, information, or intellectual rationales for action and practice are not enough.

Chin and Benne explain a third group of strategies as being based on the application of power in some form, political or otherwise. Those with less power are influenced to comply with the plans, directions, and leadership of those with greater power. Very often those with greater

power are in positions of authority. Thus the strategy usually involves getting the authority of law or administrative policy behind the change to be effected. In general, emphasis is upon the use of political and economic sanctions in the exercise of power.

The empirical-rational strategies usually employ such techniques as: basic research and dissemination of knowledge through general education; utilizing personnel selection and replacement; use of system analysis as staff and consultants; applied research and linkage systems for diffusion of research results; and, utilizing utopian thinking as a strategy of changing. The normative-re-educative strategies usually employ such techniques as: action research; group processes; collaborative problem solving; and releasing and fostering growth in the persons who make up the system to be changed. The power-coercive approaches to effecting change are: public and non-violent demonstrations against existing situations; bringing the force of legitimacy through legislation and administrative decree to desired program changes; and, transferring power to individuals and groups sympathetic to the desired change.

The author of this paper has seen the predominant strategy for installing the middle school program in public education in this country fall into the category of the empirical-rational strategy. Witness the great outpouring of literature and research about the middle school and its accomplishments in the past five years. The middle school program is proposed by professional educators, especially those in higher education, as a situation that is desirable, effective, and in line with the self-interest of public education personnel and publics which will be affected by this program.

The power-coercive strategy is also being attempted. In our own state forces are at work to develop certification requirements for middle school teachers and administrators. Certification changes have already been made which grant a teaching certificate for grades 6-9 where previously these certificates have been granted for grades 7-9. The Southern Association of Colleges and Schools is planning to utilize national accreditation standards for middle schools and junior high schools on an experimental basis this coming year. Recommendations to SACS and to the State Department of Education have been made that separate standards be established for middle schools. A Georgia Middle Schools Principals Association has been organized and is seen by some as a force in a power struggle with the long standing Georgia Association of Elementary School Principals. Teacher education programs are also being developed at several colleges and universities for the special preparation of middle school teachers. There have also been instances here in Georgia with which the author is familiar where principals and/or superintendents have installed middle school programs through administrative fiat.

On the other hand, there are also instances in this state where the normative-re-educative strategy has been the predominant one for developing middle school programs.

A preponderant reliance upon empirical-rational and power-coercive change strategies for instituting middle school programs will defeat the chances for bringing about effective and lasting curricular change. If the middle school movement is not to go the same route as the junior high school movement has gone; i.e., successful achievements as far as quantity are concerned but a fleeting success as far as meeting the needs of pupils,

then we must insist upon a strategy that will provide more promise than fad. In all likelihood such a strategy will be ecclectic in that it will employ techniques based upon all three (empirical-rational, normative-re-educative, and power-coercive) strategies outlined earlier in this paper.

In dealing with "Resistance to Change" Goodwin Watson (in Bennis, Benne, & Chin, 1969, pp. 488-496) describes some general principles to be considered in attempts to effect change. An adaptation of these principles are presented as guidelines for developing a middle school program.

Who Brings the Middle School Program?

There will be greater chance for a successful program if administrators, teachers, board members and community leaders feel that the middle school program is their own - not one devised and pushed upon them by outsiders.

There will be a greater chance for success if the middle school program clearly has whole-hearted support from top officials of the system.

What kind of a Middle School Program?

There will be a greater chance for success if participants see the middle school program as reducing rather than increasing their present burdens.

There will be a greater chance for success if the middle school program accords with values and ideals which have long been acknowledged by participants.

There will be a greater chance for a successful middle school program if it offers the kind of new experience which interests participants.

There will be a greater chance for success if participants feel that their autonomy and their security are not threatened by the middle school program.

Procedures in Instituting Middle School Programs

There will be greater chance for success if participants have joined in diagnostic efforts leading them to agree on what basic changes in the six determiners of the curriculum need to be made to implement the middle school program.

Success will be greater if the middle school program is adopted by consensual group decision.

There will be greater success if proponents of the middle school program are able to empathize with opponents; to recognize valid objections; and to take steps to relieve unnecessary fears.

There will be greater success if it is recognized that the middle school program (or at least aspects of it) are likely to be misunderstood and misinterpreted, and if provision is made for feedback of perceptions and for further clarification as needed.

There will be greater success if participants experience acceptance, support, trust, and confidence in their relations with one another.

There will be greater success if the middle school program is kept open to revision and reconsideration if experience indicates that changes would be desirable.

What Support Is Necessary to Establish Middle School Programs?

Success will be greater if utilization is made of the empirical-rational evidence which undergirds the middle school program.

Success will be greater if the personnel, materials, and facilities required for the recommended program are provided.

Success will be greater if state departments of education permit justified exceptions to the legal requirements such as certification.

Success will be greater if accrediting agencies permit justifiable deviations (or modify standards) which were originally developed for other organizational patterns where these standards hinder the implementation of the middle school program.

SUMMARY

The junior high school has for the most part failed in its original objectives to make curricular changes which meet the needs of adolescents. The middle school movement presents a new opportunity to bring about curricular changes for the pupil population which it is aiming to serve. Change in curriculum occurs through changes in the six determiners; i.e., teachers, pupils, subject matter, methods, materials and facilities, and time schedules. There will be less resistance to changes in the six determiners if an ecclectic strategy which relies primarily on normative-re-educative techniques, but also drawing upon empirical-rational and power-coercive techniques, is used to bring about a middle school program.

Is the middle school program to be promise or fad? This question will be answered in the long run by the way those of us involved in advocating, developing, and implementing middle school programs approach our challenge. If we salute our ancestor, the junior high school movement, by noting the reasons for its failure to bring about curricular changes,

then we might feel confident as we bid the junior high school goodbye that we are embarked upon a journey which holds promise for making changes in the curriculum through the vehicle of the middle school. If we fail to note the reasons for the junior high schools' failure to meet the needs of adolescents, then those of us advocating a middle school movement had better recognize that we are involved in another passing educational fad.

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Planning the middle school plant

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For more than a decade a steadily increasing number of educators, human growth and development specialists and others have claimed that most schools in districts where such traditional grade organizational structures as the 6-6, 8-4 and 6-3-3 prevail are so inappropriate for, and unresponsive to, the needs of boys and girls in late childhood and early adolescence (those roughly 10-14 years of age) as to make these "between-agers" the most neglected group in society. The contention, for which there exists considerable supportive evidence, is that the pupils who are usually found in the upper elementary and lower high school grades are so characteristically and uniquely different from those in both lower and higher age/grade levels as to require a new type of intermediate school which has an educational program and physical facilities designed specifically for them.

Largely as a result of those pressures, hundreds of new schools (there were more than 1700 by 1970) called middle schools (which is, incidentally, a label borrowed from the British) have sprung up throughout the United States. Many of these new schools have been well conceived and carefully planned and as a result have both programs and physical plants which can well serve as models for others. Unfortunately, however, the vast majority of the so-called middle schools which have been established to date appear to have been the result of a headlong rush to jump onto a popular band wagon or, even worse, of administrative or financial expendiency.

At any rate, little or no real thought, much less planning, seems to have been given to either the programs or plants of far too many of these schools. Yet, without careful planning and meticulous development of both program and plant, any school program proposal is destined to fall short of its planned objective. How then, could a school as exotic as its proponents claim a middle school should be, succeed without more than ordinary attention to planning?

Consider the school plant - the total physical facilities - the grounds, buildings, furnishings, and equipment. The school plant not only constitutes the physical, but profoundly influences the psychological, environment within which the school functions. It also comprises, in its component parts and as a whole, the tools available for teaching and learning. Would not simple logic indicate that for a school's program to be fully implemented, for it to be effectively and efficiently operated, each component of the school plant must be planned, designed, developed, and assembled on the school site in such a way as to interface tightly with the desired educational program and, more specifically, to be harmonious with the characteristics of the pupils? Should not, then, a middle school plant, be it completely new or an existing plant converted from other usage, be tailored to fit the demands of a middle school program and the needs of middle school pupils?

Assuming that the answers to the foregoing questions are affirmative, three additional questions in respect to the planning of middle school plants are suggested: What is a middle school? What should the middle school plant be like? How should a specific middle school plant be planned?

WHAT IS A MIDDLE SCHOOL?

Other portions of this publication have been devoted to fairly detailed treatments of the characteristics of the middle school and middle school pupils. However, since the basic premise of school plant planning is that the primary purpose of educational facilities is, as the word itself would imply, that of facilitating a desired educational program, perhaps some limited discussion of just what constitutes a middle school would not be inexcusably redundant.

Although many, and often conflicting, definitions of a middle school have been put forward, most recognized authorities would agree that from a purely quantitative standpoint any school composed of two or more grades (some authorities insist on at least three) between grades 5 and 8, inclusive, but in every case including grades 6 and 7, might properly be called a middle school.

It takes, however, considerably more than the uniting of a few upper elementary and lower secondary grades into an organization and facility to create a middle school - which is a fact all too frequently overlooked. The proponents of the middle school visualize not just a school populated with "between-agers", but one which will help them to make a smooth and, hopefully, trauma-free transition from the world of the elementary school to that of the secondary. They see a school free of the images of either the elementary school while incorporating the best features of both; one which will help the pupils move with maximum ease from concentration on basic skills to the use of those skills in the acquisition of knowledge and the development of social relationships; from dependence to independence, and from self-centeredness to social responsibility. A school is

seen in which the age/grade composition would be such that a pupil's peers would find his rarely consistent and sometimes peculiar moods, attitudes, and behavior to be neither ridiculous, amusing, nor disturbing. Finally, the middle school which is visualized would, in curriculum, programming, scheduling, methods, techniques, and every other possible way, make allowances for varying aptitudes and abilities and provide for individual needs and interests.

In summary, a middle school should be a laboratory for mental, emotional, and physical maturation - a school for growing up!

WHAT SHOULD A MIDDLE SCHOOL PLANT BE LIKE?

Since its philosophy and its program are still essentially in the embryonic stage and hence defy much more than broad generalization, but also because all school plants, regardless of the age/grade level to be accommodated, should be at least as unique as the respective communities which they serve, it is virtually impossible to present a prescriptive model of a middle school facility. However, there are certain features which should be common to all middle school plants and certain others which must be avoided in all.

Attacking the problem in reverse order, since it is almost always easier to discuss what something should not be than what it should, perhaps no more positive statement can be made about the middle school plant than that it, like the program, absolutely must not be either a sophisticated elementary or an unsophisticated high school facility. Ample evidence is already at hand to firmly establish that if the middle school plant has too many of the distinctive features of either the elementary

or high school, then the middle school itself will be so hampered as to cause it to almost inevitably fail in its mission as a transitional unit on the one hand and a catalyst to growth on the other. Certainly, and above all else, the middle school plant, just as much as the program, must be neither as confining, protective, or teacher-oriented as the elementary school, nor as free, demanding, and subject-oriented as the high school. Yet, it must, at the times and to the extent needed by individual and groups of pupils, be both.

Stated in a more positive manner, if the middle school program is to be pupil-oriented, if it is to be personalized and humanized, then so must be the middle school plant. The plant must provide an environment which is free of barriers to learning - one which is at the same time stimulating and comforting. It must proclaim, by its very appearance, that here the pupil is King! The visual, thermal, and sonic environments must be carefully coordinated and precisely controlled. Furnishings and equipment must be ample in number, safe, comfortable to use, and attractive.

Although there must be many more, and perhaps more important, facilities in some middle schools, in <u>all</u> of them there must be:

Places where pupils can go for advice, counseling, assistance, and emergency health care (mental as well as physical).

Places where pupils may go to work independently, both alone and in small groups.

Places where pupils may play and sulk, relax and cry, socialize with their peers and be alone.

Places where pupils may survey or explore in depth the natural and social sciences, the visual and performing arts, languages and mathematics, careers and avocations, family and community living - places where pupils can learn about themselves and the world.

Places where pupils may instantly get information of all types about any topic from a variety of media.

Places where pupils may observe nature and compete in organized games.

Places where pupils may get remedial and/or correctional assistance with whatever learning and living difficulties they may possess.

Places where pupils may store their books and wraps, study their lessons, eat, get a drink of water, answer calls of nature.

Of course, there must also be places for teachers, even though a middle school is really for pupils, with every one considered to be exceptional. For example, there must be places for teachers to work, to plan, to study, to confer with pupils, parents and their colleagues. Places to prepare lessons and complete reports, to make teaching-learning aids and to obtain ready-made ones. There must be places for teachers to rest and relax - to just get away for awhile. Of course, there must be places for teaching, so the teachers will share many of the places for pupils, especially the laboratories and information centers.

Yes, a middle school plant must have the above and many other features. There must be all kinds of teaching and learning aids. There must be either varying sized spaces so that small, medium, and large sized groups of pupils and teachers may work and play together - or at least there must be the capability for the almost instantaneous creation of such spaces.

Most important of all, a middle school plant must be sufficiently flexible, be adequately physically permissive, to be able to respond to the program changes which will surely come in the future, yet still provide all of the specialized facilities needed today.

Finally, although not absolutely essential to the actual operation of a middle school program, serious consideration should be given to making the middle school plant a comprehensive community center. Not as localized as most elementary schools or as remote as most high schools, the middle school ordinarily has a geographic attendance area and an age span among the families of its pupils which make for a natural community education clientele. Add to that the many already required facilities which can easily be put to community use and it would be most injudicious not to make the middle school a community school as well. Furthermore, with a little leadership effort on the part of school personnel, other governmental, voluntary, and civic agencies can often be induced to participate in the development and operation of what can easily become a comprehensive, multi-agency, center for community education and service, and that with the addition of only some relatively simple and inexpensive facilities.

HOW SHOULD A SPECIFIC MIDDLE SCHOOL PLANT BE PLANNED?

The features for middle school plants which have been suggested above notwithstanding, each middle school should be both educationally and architecturally planned as a specific, separate, entity, unless, of course, several are being planned simultaneously for the same school district, in which case one educational plan could, with only variations to meet specific localized needs, be used for all. Even if the latter were the case, there would be considerable merit in making the architectural style of each plant distinctively different, if only as a facade.

At any rate, assuming that a need for a middle school attendance center has been established, there are certain steps which should be taken in order to ensure that the school plant which is to be developed will adequately facilitate the desired educational program.

The method which has to date proven to be the most successful approach to getting the type of school plant which is desired is that of providing the architect with a set of educational specifications for his use in developing the architectural program. Not to be confused with architectural specifications, which are written instructions to the builder containing all the information pertaining to materials, style, workmanship, and so forth, educational specifications are written instructions to the architect containing all of the necessary information pertaining to the desired school program and the facilities needed to operate it.

Educational specifications may take many forms and can be as brief or comprehensive as school officials and the project architect deem essential for the former to convey a verbal portrayal of the desired facility to the latter. However, it is suggested that an outline similiar to the following be utilized, although it should be mentioned that some educators and architects question the necessity of such extensive information.

Suggested Outline for Educational Specifications

I. General Introduction

- A. The Problem
- B. The Planning Process
- C. Description of the Community to be Served
- D. Statement of General Educational Philosophy and Objectives
- E. Characteristics of Pupils and Adults (if any) to be Served
- F. Characteristics of the Program and Organization of the School

G. Anticipated Community Use of the School Plant
H. General Trends

II. Basic Considerations

A. Introduction
B. Identification of Educational Spaces
    1. General Purpose Classrooms
    2. Special Instructional Areas
C. Auxiliary and Service Facilities
D. Environmental Considerations
    1. General
    2. Thermal
    3. Sonic
    4. Visual
        a. Color
        b. Lighting
    5. Furniture and Equipment
E. Flexibility
F. Inter-departmental Relationships
G. Summary of Space Requirements

III. Educational Specifications (by department or grade level)

A. Characteristics of the Program
    1. Educational Objectives
    2. Discernible Trends
    3. Activities and Enrollments

B. Physical Requirements
    1. Space Requirements
    2. Furniture and Equipment
    3. Special Requirements
    4. Storage Requirements
    5. Intra-departmental Space Relationships

Aside from those considerations which are basic to the school plant as a whole, the real meat of any educational specifications is the portion dealing with specific programs and facilities requirements for each department, grade level, or other organizational component (see III above). Therefore, a series of questions, along with suggestions for responding to them, is offered below as a guideline for developing that portion of the educational specifications.

1. Educational Objectives. What are the educational objectives of the department, discipline, or grade level?

   Educational objectives should be stated in such a way as not to be excessive in length but yet be complete and easily understood by persons not familiar with the educational terminology.

2. Discernible Trends. What changes in curriculum content, internal organization, and/or procedure appear in the offing which may affect facilities requirements?

   Discernible trends should be stated in detail after much research. Attention should be given to trends in curriculum offerings and organization, course content, activities, enrollments, and physical facilities.

3. Activities and Enrollments. What will actually be expected to take place in each teaching-learning and other space? What will be the minimum and maximum number of persons engaged in each type of activity at any given time? What percentage of the total school day and week will likely be devoted to each type of activity? What will be the minimum and maximum number of pupils enrolled in the department, grade level, discipline, or other organizational unit under consideration?

   Activities and enrollments should be stated and explained in detail. These two factors, along with discernible trends, probably have more direct relationship to the types of physical facilities which will be needed than all other factors combined.

4. Space Requirements. What types, numbers, and sizes (approximate area in square feet) of spaces will be needed to accommodate the identified activities and enrollments?

   Actual sizes of spaces will ultimately be determined by the architect and many in fact prefer that educational planners make only general suggestions on this aspect of the projected school plant. However, most architects not only welcome but desire carefully thought out statements of desired spaces. The most important thing to remember in projecting space requirements is that any determination of needed numbers, types and sizes must come from a careful analysis of anticipated activities and enrollments, with some allowance perhaps being made for possible future changes which are indicated by discernible trends. If space requirements are stated, not only classrooms but also all other spaces such as teacher workspace, conference rooms, special storage areas, and the like should be included. Sizes of spaces should be expressed only in terms of square feet. Unless given activities or equipment require specific heights,

widths, or lengths which may not be known by the architect, no attempt should be made to describe physical dimensions or to specify building materials, since these are not generally educational matters of concern.

5. Storage Requirements. What types and amounts of equipment, supplies, and teaching-learning materials will be stored in each department, room, or space?

   Storage requirements should include kinds, sizes and amounts of materials to be stored. Specific information as to type and desired relative location of needed storage facilities is important. Consideration should be given to portable and semi-permanent storage facilities in order to avoid unduly hampering flexibility.

6. Furniture and Equipment. What kinds, sizes, and amounts of furniture and non-stored equipment will be required in each room or other space (e.g., chalkboards, display facilities, shelving, tables, desks, chairs)?

   Furniture and equipment requirements should be based upon the types of activities to be conducted and upon anticipated enrollments. Careful consideration should be given to utility, flexibility, comfort, and safety. Avoid letting personal prejudice and tradition dictate recommendations. Only those items of furniture and equipment which will be fully utilized in the immediate future should be specified. Consideration should be given to the utilization of as much portable equipment as possible in order to permit maximum flexibility and ease of future change.

7. Special Requirements. What special needs, if any, exist for each room or other space (e.g., ventilation, color, acoustical treatment, ventilation, utilities, illumination)?

   Special requirements consist of those physical features and facilities which are not normally included in a functionally designed, well-equipped general teaching-learning space. Such requirements usually exist only in such places as shops, laboratories, music rooms, auditoriums, gymnasiums, and the like.

8. Desired Space Relationships. What physical relationships should the spaces needed by this department or grade level bear to each other? What spaces, if any, should be separated only by operable and/or moveable partitions? What physical relationship should exist between the spaces dedicated to this department and/or grade level and other components of the school plant?

   Desired space relationships should be described verbally. Diagrams may be used to supplement the verbal description so long

as no attempt is made to prescribe dimensions or exact locations of spaces, both of which must ultimately be determined by the architect. In suggesting space relationships, careful consideration should be given to the best possible functional relationships which can exist whthin and between departments and grade levels. Possible location of operable and/or moveable partitions should be examined carefully.

9. General Comments. What general suggestions not provided for in any of the above questions should be made to the architect?

   General comments consist of information or requirements which are either not provided for or not covered fully under other categories. Such comments should be relatively brief and should be confined to such matters as school organization, desired environmental conditions, and other supplementary information which might be useful to the architect.

Whether an outline and questions such as those suggested above are used or some entirely different approach is taken, the educational planners must remember that the success of the architectural planning, and ultimately of the school plant, depends almost entirely on the quantity and quality of the information which school officials supply to the architect. Thus, if an architect has at his disposal for study and reference a complete, concise, readable, and easily understood description of the desired educational program and environmental and physical facilities needs, then the chances are excellent that he will do an outstanding job in designing the school plant. Therefore, if the question arises as to just how much and what kinds of information should be given to the architect, it need only be remembered that it is always far better to supply him with more information than he needs, or even wants, than it is to not give him enough.

In addition to the uses described above, carefully formulated educational specifications can serve at least two other very useful purposes. The first of these is that once the architect has developed his tentative

design of the proposed school plant and presented it to school officials for their consideration, the educational specifications can be used as a basis for reviewing the architectural plans. Second, when the plant is completed and ready for occupancy, the educational specifications can serve as an orientation manual for faculty and staff.

Perhaps a few words should also be said about the educational planning process itself. Several approaches to the development of educational specifications and/or the general educational planning of a school plant are possible. For sake of brevity only a few will be mentioned.

The most efficient and least time consuming means of developing educational specifications or otherwise carrying out the educational planning of a school plant is that of organizing a small committee of subject specialists, assisted by knowledgeable consultants, and have them do all of the planning.

The most used, but somewhat less efficient, procedure is to establish a number of committees of teachers and others, organized by departments, grade levels, or disciplines, with a representative of the central office and/or a consultant serving as a catalyst, and to have each committee develop the specifications for its own area of interest. If this method is utilized, it is necessary that a steering committee be created to coordinate and pull together the efforts of the various committees, to reconcile differences, establish priorities, and to generally supervise the planning effort.

The method which is by far the least efficient, most time consuming, most administratively difficult, and which lends itself most easily to the

misunderstanding of charge and role, and yet the one which may, in the long run, produce the greatest public understanding and support for the school plant planning and development project, is that of creating committees of teachers, pupils, and lay citizens to do the educational planning. Obviously, if this method is utilized, strong central direction, leadership, and control is a must. Needless to say, however, if the middle school is also to be a community school, the community involvement method of planning should definitely be used. Even if such is not the case, at least one such committee probably should be used to help identify such limited community use of the projected school plant as may be anticipated.

Finally, regardless of what planning approach is utilized, and whether or not complete educational specifications are developed or the architect is instructed verbally (which is a poor means, indeed), school officials should, before reaching any decision as to program or facilities, obtain all available information having a potential bearing on both, identify and examine all possible alternatives, and seek advise from all who will be affected by the school plant.

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Facilities for middle schools

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Developments underway in American education point to the emergence of a new alternative--the middle school. This new alternative appears to provide great potential for the improvement of education as it is gradually implemented in the organizational structure of school districts throughout Georgia and the nation. As this new movement gains momentum, it appears desirable to consider alternatives to providing facilities that lend support to middle school philosophy and objectives, that facilitate desirable instructional approaches, and that provide a physical environment appropriate to the clientele served by the middle school program.

The purpose of this article is to explore the relationships of the emerging middle school program to facilities needs and to suggest planning guidelines for facilities development. Limitations of time and space prevent a comprehensive and detailed analysis of facilities as a critical factor in the successful implementation of the middle school program. Some guidelines are presented, however.

PROGRAM-FACILITY RELATIONSHIPS

School could be kept under the shade of a tree if it were not for weather and the necessity to provide a variety of organized learning experiences for pupils with a wide range of interests and abilities. The complexities involved in the technology of modern education strongly suggest the need to tailor the school plant to fit a carefully planned

program. While designing to a pre-determined program is a necessary condition, it is not a sufficient one. Usually the schoolhouse is planned to last for many years and, therefore, must be capable of responding to evolving program changes. Since the middle school program is in the process of evolving, the school plant must have convertible features that allow it to change as the school program changes.

The micro-environment of the middle school must respond to the needs of the middle school child. While a barn or a warehouse can provide a degree of weather protection, each lacks the environmental features needed to produce the kind of social, psychological and physiological environment needed by middle school children.

Current practices clearly indicate that many, if not most, new middle school programs are implemented in existing buildings. Such buildings usually were planned and used either as elementary schools or as high schools. Neither is suitable for the recommended middle school program. The self-contained classrooms and the usual lack of specialized facilities of the traditional elementary school render it insufficient. The large capacity, the highly organized laboratories, shops and physical education facilities of the secondary school are usually too specialized and over-designed for the middle school program. Major conversions, additions, and extensive modernization are necessary in order to make old buildings more nearly adequate.

The middle school program is neither an extension of the elementary school nor a little high school. It is recognized as a program in its own right, and the facilities planned for it should be unique to serve its own purposes. For these reasons, the facilities provided for the middle

school must be planned in terms of the organizational and instructional practices that are unique to the requirements of the group of pupils it purports to serve.

SOME IMPERATIVES OF FACILITIES PLANNING

There are several factors that should influence the planning and designing of a school plant if it is to perform in an optimum manner. These usually include: 1) the characteristics of the clientele for which the facility is being planned, 2) the organizational and instructional practices which generate the program of activities provided for the school's clientele, and 3) the inputs from the external environment (society) which determine fiscal, technological, and other constraints.

Selected Characteristics of the Middle School Child

The middle school purports to serve children who find themselves in that period of human growth and development that occurs between childhood and adolescence. This middle age group usually includes children between the ages of 10 or 11 and 14, in grades 5 or 6 through grade 8. The children of this age group have physical, social, and psychological characteristics which set them apart from the elementary child and the more sophisticated, older adolescent. These characteristics are of major importance to those who plan and design the middle school plant.

Selected characteristics of importance to planning the physical plant are considered in the following paragraphs.

The middle school child is undergoing very rapid growth and has to adjust to significant body changes. In this process there seems to develop a concern about personal appearance. While they go through a stage of awkwardness, there is an increasing capacity to participate in all types of physical activities including sports. Likewise, the children are of all sizes and shapes. Girls usually begin to develop much faster than boys, and there is a wide range of sexual maturity.

Planners should take into account the wide divergence in size and its impact on various physical aspects such as drinking fountains, toilet fixtures, counter heights, ceiling heights, and furniture including desks, tables and chairs. Recognition of the awkwardness of these pupils should be reflected in the planning for safety in the school. Uses of glass in lower walls and doors and sudden changes in floor elevations should be avoided.

The middle school child wants to belong and considers the peer group as all important. This age child appears to be ready for more experiences in a social environment. Membership in a club or on a ballteam can contribute immeasurably toward their social growth. The physical plant can enhance the effort of the school to meet these needs by providing both informal and formal settings for social activities. An informal lounge off a lobby for group social activities, recreation type facilities and indoor and outdoor physical education space can make a contribution to this area of need.

The middle school child is searching for independence while striving to maintain a sense of security. These children are beginning to try out adult roles. They are striving for individuality and responsibility.

Facilities should be planned to provide a variety of arrangements for greater individualization of the instructional program. Facilities for the exploration of the work of the adult world are also imperative to satisfy a growing interest in vocations and a desire to prepare for a job experience.

Boundless energy and an eagerness to explore characterize the middle school pupil. There is a need on the part of middle school children for the release of energy through movement and the elimination of unnecessary physical restrictions. The middle school should promote an expansion of the mental "life space" of the learners (Wiles, p. 48). New facilities should provide open-space plans. In facilities, old or new, the elimination of unnecessary walls and adaptable space arrangements help to promote a feeling of greater freedom.

The middle school child shows increased interest about himself and his environment. The middle school and its facilities can offer the opportunity for children to come into contact with a vast number of experiences in the sciences, arts, humanities and the world of work. The physical plant can strengthen this opportunity by providing an environment which is interesting and stimulating.

Selected Characteristics of the Middle School Program

Planning a new building offers many opportunities to incorporate features which will enhance the middle school program. Similarly, the opportunity to modernize an old facility to house a middle school program provides challenges which can be productive in terms of program

development.

There is neither a single design nor a model plan for the middle school plant. There is no single set of criteria that should dictate the layout, arrangement, or design of the facility. The planners need to consider both the nature of the youngsters to be served and some of the underlying characteristics of the middle school program. In other words, the building should be planned to suit the program and to serve the needs of those who will use it.

Selected characteristics of the middle school program and their implications for facilities needs are considered in the following paragraphs.

The middle school program is characterized by its transitional nature. One of the aims of the middle school is to ease the movement of pupils from the elementary school to the secondary school so that it will not be traumatic (DeVita, et. al., p. 201). The object is to preserve the more intimate pupil-teacher relationships of the elementary school while introducing the more specialized programs of the secondary school. To accomplish this, the school plant must have convertible and adaptable characteristics to allow for team teaching, large and small group instruction, independent study and self-contained skill or learning centers. Both multi-use and a variety of specialized spaces of different sizes are needed. The flow of space should allow teacher control of space arrangement so that changes in space layout can be made at the will of the teacher or teaching team.

The middle school offers a variety of learning experiences in academic and related areas that permit the pupil to explore and experiment (DeVita,

et. al., p. 172). Both content and method are involved in this guideline. The content for learning should be appropriate to the great variety of needs and interests of the middle school pupil. Likewise, the opportunity for pupils to progress through the program at their own learning rates suggests considerable emphasis on individualized instruction and independent study. Both large and small group instruction are essential to the process of human interaction which is a necessary ingredient in the learning experiences of the middle school pupil. The need for small and large group instruction and individualized study suggest the need for a group of teachers working with a group of pupils.

The organization and delivery of the learning content in the middle school program suggest a variety of approaches to the development of the middle school curriculum. Learning experiences of the curriculum may be classified as follows:

1. Personal development - learning experiences which relate to the individual pupil's development as a person.

2. Skills for continued learning - strengthening the basic skills and developing new skills to assist the child as a learner.

3. Organized knowledge - provide systematic instruction in the subject fields of English, mathematics, science, and social studies [Alexander, et. al., p. 65].

Implications of the foregoing suggest the following features in a new or modernized school plant.

1. The provision of space for learning skill centers,

2. Rooms of different sizes that may be used by large and small groups,

3. Equipment and layout for independent study,

4. Laboratories equipped for personal development areas including physical education facilities and facilities for health services,

5. Facilities for exploratory programs such as art, music, industrial arts, foreign language, and home arts,

6. Special spaces for an activity program,

7. Rooms designed and equipped for instructional centers with arrangements for use by teams of teachers,

8. Areas for team planning,

9. Space for private teacher-pupil discussions.

The middle school requires a strong guidance program to assist pupils of varied maturity levels adjust to life, both in and out of school. This is a service provided for all children, not a particular target group. The program must serve a group of pupils with a wide difference and rate of maturity. The school should have a team of people performing the guidance function, but the key person is the classroom teacher.

Provisions for space must include work areas for a nurse, social worker, and guidance specialists. The classroom teacher should serve as a member of the guidance team and have a close physical relationship to the guidance facilities for access to pupil records and guidance planning activities. Spaces for large groups and individual testing are needed. Likewise, provision should be made for student orientation. Both large and small group spaces are needed for orientation purposes--these may be multi-use.

A large variety of instructional materials and communication media are needed to inspire, motivate, and teach the well-informed and

discriminating middle school pupil. Books, periodicals, film, filmstrips, maps, pictures, tapes, transparencies, microfilm, video tape, single concept film, recordings and other forms of media are available to support and assist with the implementation of the school's curriculum. A center planned for the effective utilization of these resources can help to alter the more traditional teaching approaches and enhance the efforts of pupils working on independent and small group projects. Such a center can be made available for both the structured and non-structured time of the pupil so that he may acquire skills of gathering, interpreting and using information.

The implications are clear. The school plant must include an instructional resource center readily accessible to both teachers and pupils. Facilities for independent and small group study must be a part of the center. It should provide an atmosphere for serious learning, yet be an open and inviting place for pupils to be. It should be open without barriers and doors so that there is the ready accessibility and availability of resources. In addition to a large resource and study area, there should be appropriate storage areas, necessary work areas, periodical storage and display, media hardware and software storage, and areas for the processing, production and dissemination of available teaching and learning resources. Study carrels for independent study and small group work and discussion spaces are also necessary.

Auxiliary services which support instructional services and accommodate the non-instructional needs of pupils and staff are an essential element in the middle school program. Recruiting, organizing and

coordinating the activities of the school staff are essential administrative services. Likewise, the provision of food services and the care and maintenance of facilities provide support that is needed. Scheduling the maintenance of teacher and pupil records are likewise critical support activities. Parent-school and community-school relations are essential to the support of the school's program.

The physical plant must provide facilities that support the programs and services in these areas. Administrative offices, conference rooms, teacher-work and rest areas, food service facilities and community-use spaces are needed. Administrative areas should be conveniently accessible to the public and to the teaching staff. Food service facilities should be directly accessible to pupils and, at the same time, be planned for community use and directly accessible from the outside for public convenience.

Other auxiliary spaces such as corridors, lobbies, restrooms, storage and custodial service facilities must be included. Safety facilities must also be a major consideration because of the need to provide for the safety of occupants.

OTHER PLANNING CONSIDERATIONS

A comprehensive treatment of this topic would consider a wide variety of factors that are critical to the planning or modernizing of a middle school plant. However, for purposes here, three additional considerations are discussed briefly.

Planning Involvement

At the time a new school is being planned, a rare opportunity is presented to re-examine existing educational practices and develop new directions for educational inprovement. Faculty and staff can benefit from a major planning effort to re-examine philosophy, develop goals and objectives, and create new program designs for accomplishing the goals held for education. This writer suggests that staff and faculty time devoted to planning a new school can result in numerous benefits; perhaps the most beneficial of all is that facilities and equipment will be utilized to implement a cooperatively developed educational program. A simple postulate states that those who participate in the development of a plan will strive to cause it to succeed.

There are other benefits. Faculty and staff can work together towards the accomplishment of a common set of goals instead of moving in different directions. The persons involved are likely to have a broader understanding of the total program and thereby, should be a more effective contributor to the larger professional effort. The team approach to planning the school plant will reap benefits well beyond the investment of time and effort in the process.

Planning for Change

It is inevitable that the program of the middle school will change. It is in the process of evolving; consequently, new developments with experience will have their impact on current practices. Furthermore, since there are no set patterns for program design, there will be local

and regional differences in curriculum, instructional approaches and organizational structure. Likewise, societal influences and the rapid rate of information and technological obsolescence will have their impacts on both program and physical plant.

For these reasons, an important characteristic of the middle school plant must be its convertibility. In other words, it must have the ability to respond to the changing demands and requirements of an evolving and developing educational program. Building structure, utility and service systems, and interior partitions must be changeable and modifiable without major expenditures of time and money. Current technology can provide alternative systems for accomplishing this vital feature in a school building. Failure to pursue this guideline will result in early obsolescence and an impairment of the program of the middle school.

The Physical Environment

Little has been said in this article about the need for consideration of the physiological and psychological impact of space and facility design on the middle school pupil. This is the subject for a much longer treatise. Careful attention must be given to the control of temperature, noise reduction, lighting and seeing, safety and health, color and aesthetics. Technology has provided the means whereby these factors can be designed to serve our needs. These environmental factors can affect our attitudes and can get in the way of teaching and learning. The needs and reactions of the middle school pupil to an engineered environment must be a major consideration in the planning of the middle school plant.

SUMMARY

The middle school pupil requires a unique program of education to fulfill his educational needs. The school plant needed to support that program must have a set of unique features included in its design. There is no common facility model that will furnish the needed requirements. Each school plant must be developed after consideration of the basic philosophy, goals and objectives, and instructional plan to be implemented in it. Faculty and staff participation are essential to the development of a successful school facility. To assure the effective use of the school plant in the implementation of a proposed educational program, faculty and staff must be involved in the planning process.

The middle school program is in the process of developing. If for no other reason than this, the school plant must be planned for change. Structural components must permit space re-arrangement quickly and easily. Utility and environmental systems, interior partitions, cabinets and furniture must be relocatable and renewable with a minimum of time and expense.

The impact of environmental systems such as lighting, acoustics, safety, temperature control and aesthetics must be a design consideration. They may adversely affect or get in the way of the teaching and learning effort.

In conclusion, the middle school plant must be planned to support the efforts to meet the educational needs of the middle school pupil. At one and the same time, it must have the capability of responding to changes in education that appear inevitable.

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